

# CONNECTING CHELTENHAM

# **BASELINE REPORT**

# SYSTIA

16 SEPTEMBER 2019

FINAL VERSION

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# 1 | Introduction



## INTRODUCTION

In June 2018 SYSTRA was appointed by Cheltenham Borough Council to develop a Borough-wide transport strategy. The strategy will help deliver Cheltenham's wider place making agenda and integrate new development into the existing transport network.

This report is a baseline that collects a wide range of contextual information in one place, forming the evidence base from which drivers for change and key issues have been identified, along with key opportunities. The report is the foundation of the Connectivity and Modal Shift strategy.

To accommodate growth and support the Borough's 'place' ambitions, it will be essential to support an increased proportion of trips undertaken sustainably. This requires an understanding of existing movements, new movements that will be generated by development, and the barriers to increased levels of sustainable travel that currently exist.

The baseline has therefore looked broadly at Cheltenham as it is now, considering land use, the health and well-being of its citizens, local heritage and the quality of the built environment, green infrastructure, environmental conditions, and, of course, existing transport networks and observed travel patterns. This baseline report also includes the results of the first stakeholder engagement workshop.

# 2 | Cheltenham Now

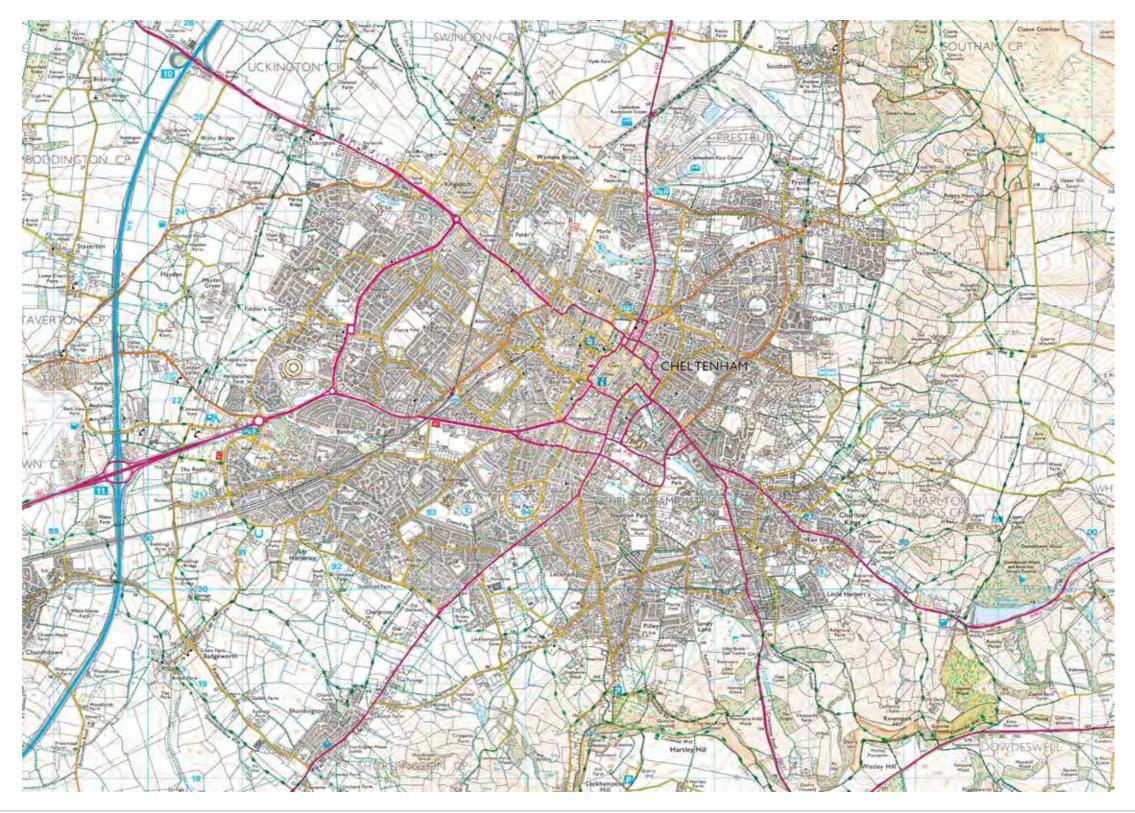
Connecting Cheltenham - Baseline Report

## CHELTENHAM

Cheltenham is a town and borough situated on the edge of the Cotswolds, within Gloucestershire's Central Severn Vale.

The town is famous for its spa heritage and its beautiful built and natural environment. The town is also well know as home to a number of important sporting and cultural festivals.

The town has a population a of circa 120,000.



#### CHELTENHAM IN CONTEXT

Cheltenham is located at the edge of the Cotswolds Area of Outstanding Natural Beauty (AONB), which constrains growth of the town to the east and south-east.

Cheltenham's nearest city is Gloucester.

Gloucester and Cheltenham are separated by the M5, which serves Cheltenham via junctions 10 and 11.

The A40 is an important strategic road route that runs through the town, connecting Gloucester to Oxford. Other strategic routes that pass through Cheltenham include the A46, A435 and A4019.

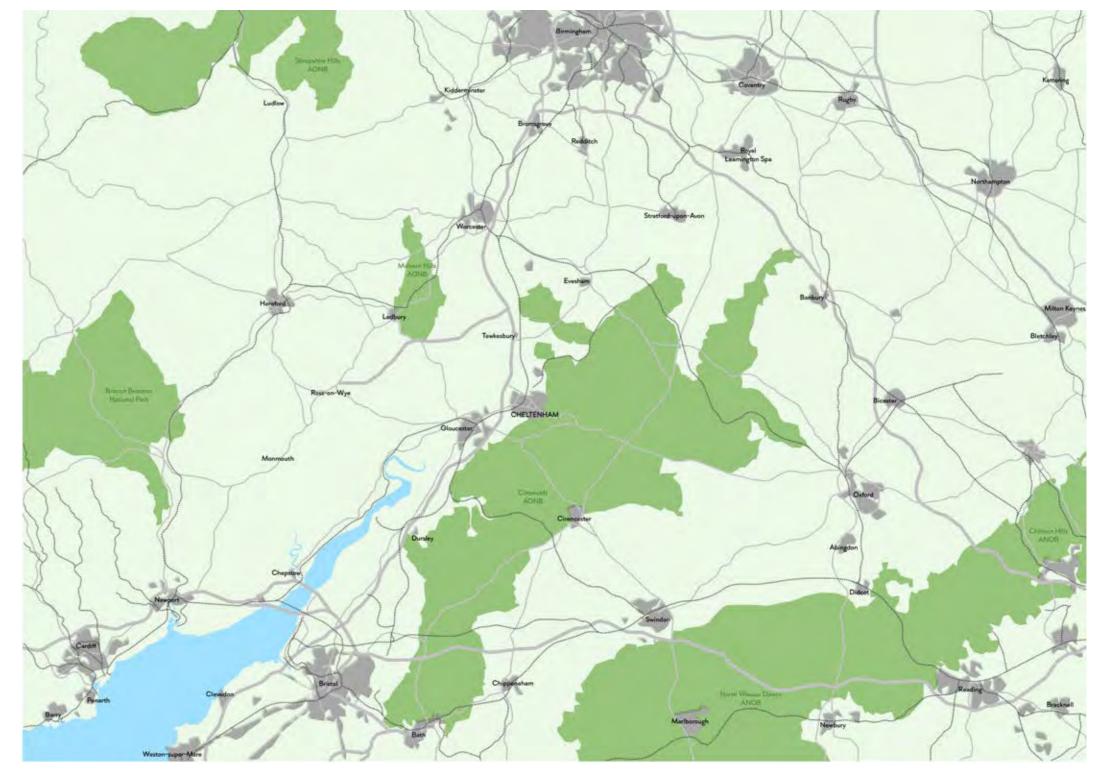
The town is on the Bristol-to-Birmingham Main Line railway, with regular passenger services connecting it to national destinations such as London, Birmingham, Manchester, Cardiff, Bristol and Exeter and Gloucester.

Train services stop at Cheltenham Spa station, which is located approximately 1 mile from the town centre.

Cheltenham sits on National Cycle Route 41.

#### LEGEND





#### NEIGHBOURHOOD LAND USE

The neighbourhood land uses are illustrated in the figure on the right.

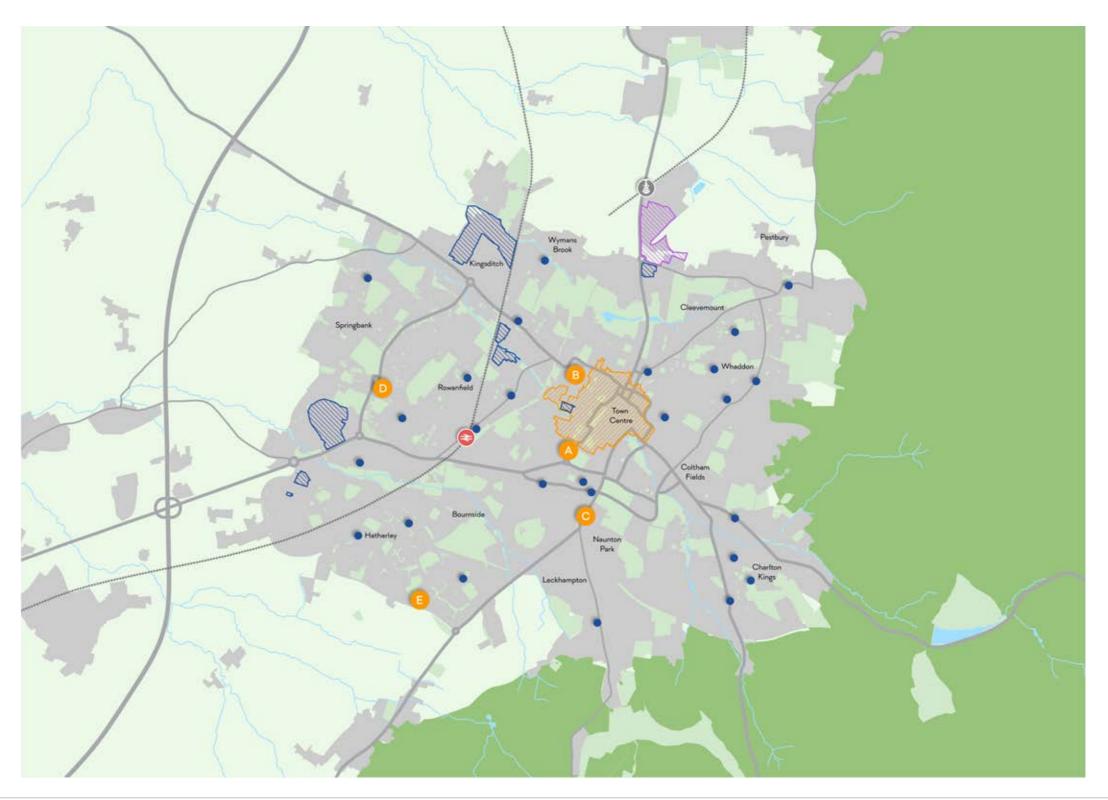
Cheltenham's topography is relatively level.

Cheltenham has a centrally located town centre that is connected to surrounding neighbourhoods by a well-connected street network. Local centres are well distributed throughout the town.

The three main areas of employment are the town centre, Kingsditch retail and employment area and GCHQ.

The compact nature of the town, its connected street network and level topography are all important features that support and encourage walking and cycling for a wide range of purposes and across a wide range of people.



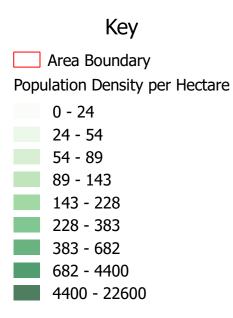


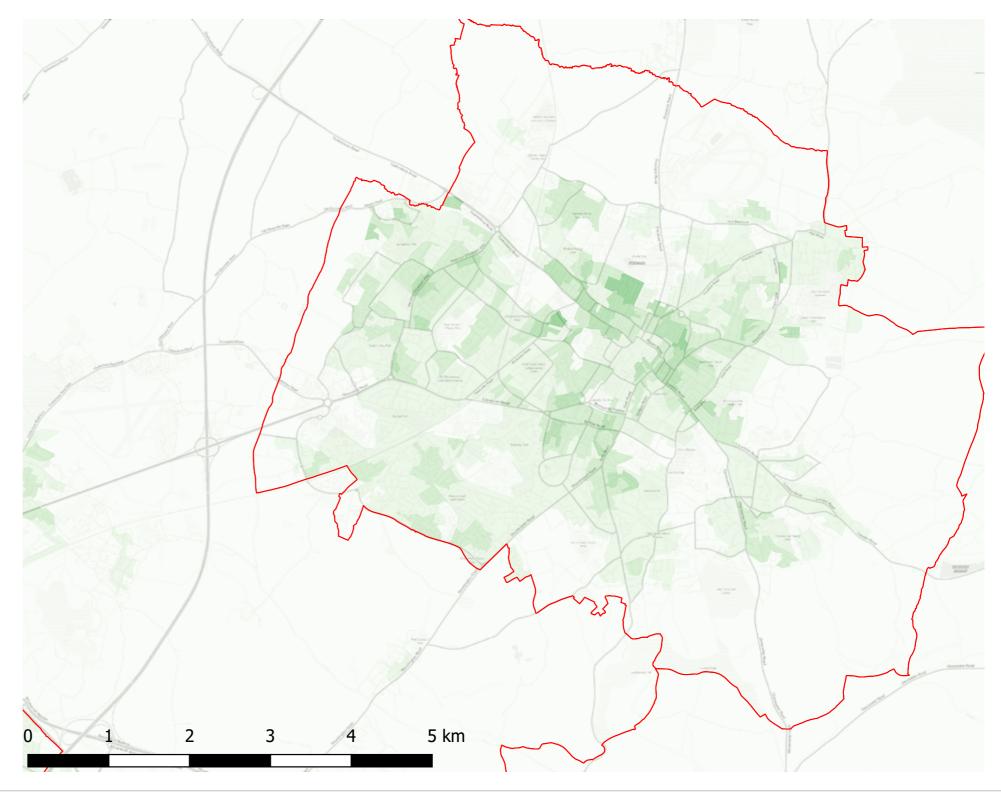
# POPULATION DENSITY PER HECTARE

The population density is fairly evenly spread around much of the town, although it is higher in the areas bordering the retail core, and particularly in and around St Paul's. Towards the outskirts of Cheltenham, the population density drops quite significantly, especially towards the east and south east.

Population density is important for sustainable access to local shops and services. Sparsely populated areas will have a smaller population within a comfortable walking or cycling reach of services than more densely populated areas. This impacts on how people travel to local shops and centres, and how accessible services such as healthcare, employment centres, schools or local buses are.

The scale of Cheltenham means that in practice most places are within a comfortable cycle ride of most other places, so the population densities are more interesting in terms of access to services on foot.





# LOCAL HERITAGE

A very significant proportion of Cheltenham is Conservation Area and several scheduled monuments are located on the periphery of the town, as illustrated by the figure on this page.

Cheltenham has a strong local heritage and the quality of its townscape and landscape are important.

Transport networks and behaviour should seek to support and enhance the features.





#### **GREEN INFRASTRUCTURE**

Cheltenham sits at the base of the Cotswold scarp, which presents a further constraint to growth on the town's south-eastern and eastern edges.

Several watercourses run through Cheltenham, falling in a broadly south-east to north-west direction, and including Hatherly Brook and the river Chelt. These broadly align with strategic green corridors which pass through Cheltenham Parks and greenspaces. These are highlighted on the plan here and extend within and through Cheltenham, and out towards the Cotswolds AONB and the M5.

Although rivers form barriers to movement along orthogonal routes, these watercourses are small, and therefore relatively easily bridged. Bodies of water and watercourses as well as green corridors are desirable features to walk and cycle along, and therefore can enhance the attractiveness of active and sustainable modes, so long as routes are overlooked and don't feel isolated.

#### LEGEND





# STRATEGIC GROWTH

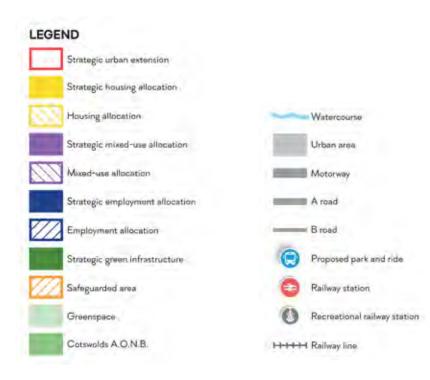
A number of strategic residential, economic and mixed use developments are planned to Cheltenham and surrounding areas.

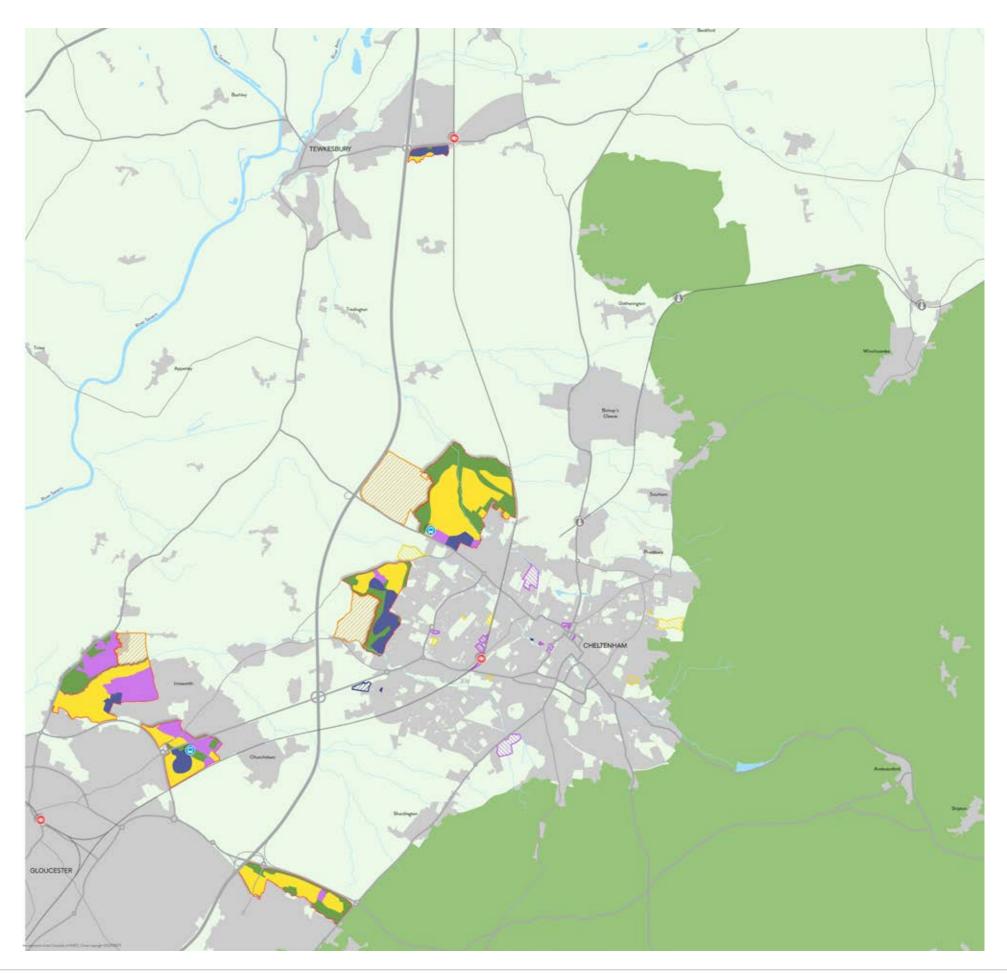
The Cyber Park proposals represent an important strategic employment allocation along the town's western edge, expanding the employment offer in the area broadly centred around GCHQ.

An large residential allocation is also planned to the north-west.

Growth within Cheltenham, therefore, is concentrated to its west, extending the built up area of the town towards the motorway and nearby Gloucester.

Strategic allocations are also proposed in Ashchurch (Tewkesbury) to the north and Gloucester to the south west. All of the proposed strategic allocations are illustrated in the plan on this page.





#### CHILDHOOD OBESITY

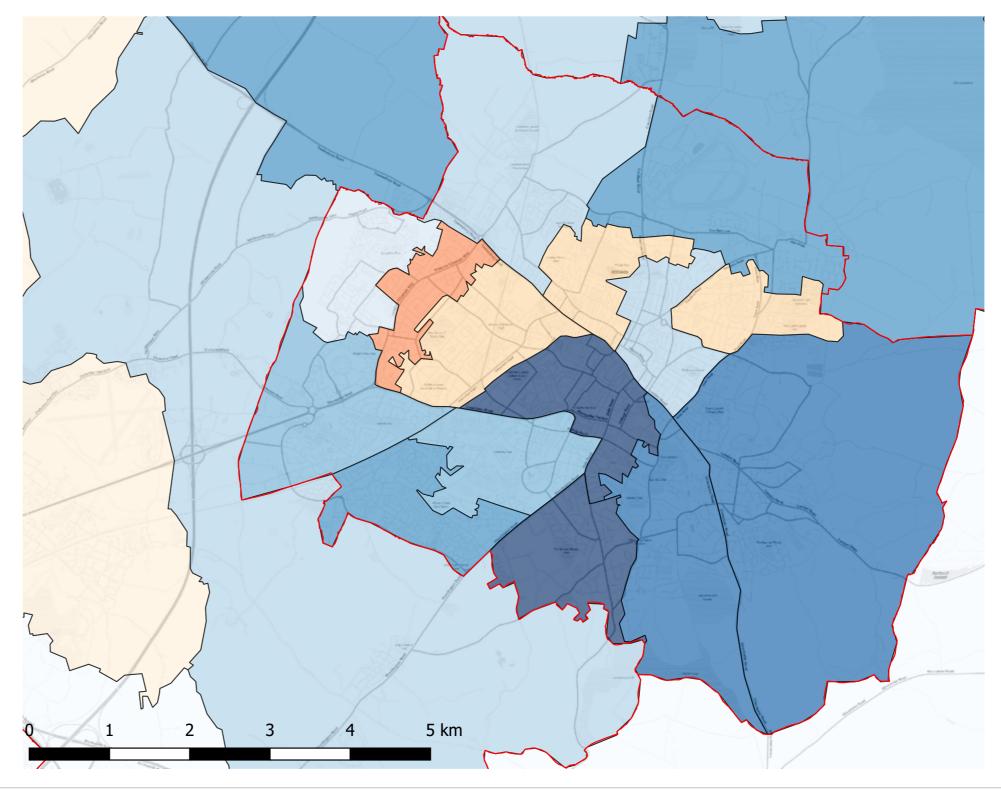
As illustrated in the figure on this page, overall rates of childhood obesity in Cheltenham are lower than the English average. Warmer colours indicate levels of obesity above the English average.

Southern and eastern areas perform particularly well on this metric. However, the neighbourhoods directly adjacent to Princess Elizabeth Way, and a number of areas bordering the Tewkesbury Road (A4019) to the north and the Gloucester Road (A40) to the south have the worst childhood obesity rates in Cheltenham, with rates above the national average.

Even for many of the areas within Cheltenham where childhood obesity is lower than the national average, the levels should be viewed with concern.

Lack of activity is one of the main causes of obesity.





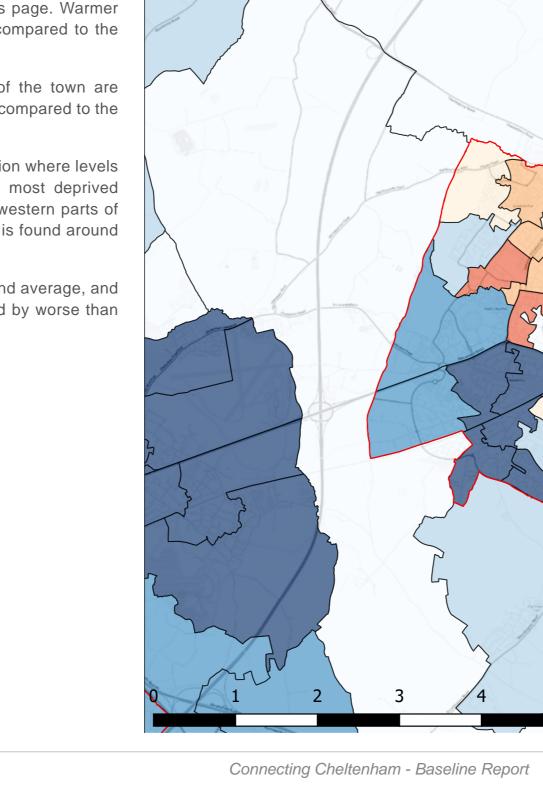
## INDEX OF MULTIPLE DEPRIVATION

The Index of Multiple Deprivation reveals a complex picture in the town, and is illustrated in the figure on this page. Warmer colours indicate higher levels of deprivation, compared to the English average.

The northern, eastern and southern fringes of the town are characterised by very low levels of deprivation compared to the English average.

However there are significant areas of deprivation where levels are higher than the national average. These most deprived areas are primarily located in the central and western parts of the town, although another area of deprivation is found around Priors Road.

These areas are more deprived than the England average, and there is a notable overlap in the areas affected by worse than average childhood obesity

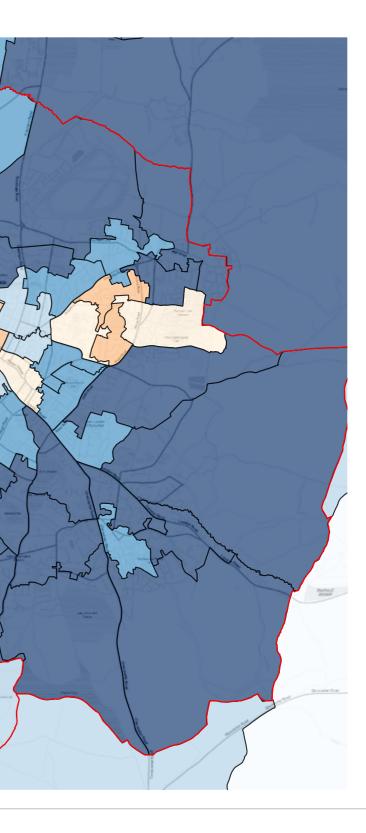


5 km

Key

Area Boundary Index Multiple Deprivation

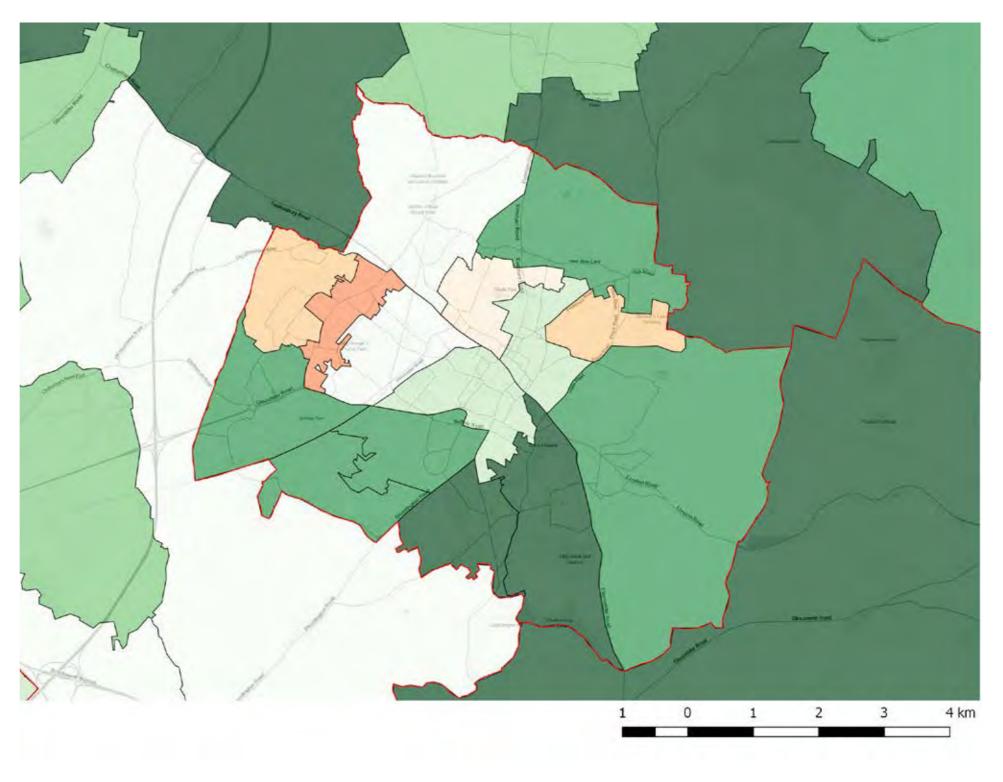
< England Average 0.48 - 7.04 7.04 - 11.83 11.83 - 16.69 16.69 - 21.67 >= England Average 21.67 - 32.27 32.27 - 44.46 44.46 - 59.20 59.20 - 92.60



# HEALTHY LIFE EXPECTANCY -MALE

The male (this page) and female (next page) healthy life expectancies have been plotted for Cheltenham and surrounding areas. Warmer colours indicate lower healthy life expectancy than the English average.

In common with previous plots, these plots show how Cheltenham compares with the national average.

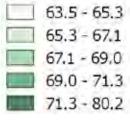


#### Legend

Male Healthy Life Expectancy (msoa) below England ave

	46.3 - 53.1
	53.1 - 56.1
	56.1 - 58.7
	58.7 - 61.2
	61.2 - 63.4
Mala	Linghthy Life

Male Healthy Life Expectancy (msoa) England ave or above



# HEALTHY LIFE EXPECTANCY -FEMALE

Within Cheltenham there is little variation in the picture seen for men and women.

Once again, these areas correlate with areas of higher childhood obesity, and higher Index of Multiple Deprivation.

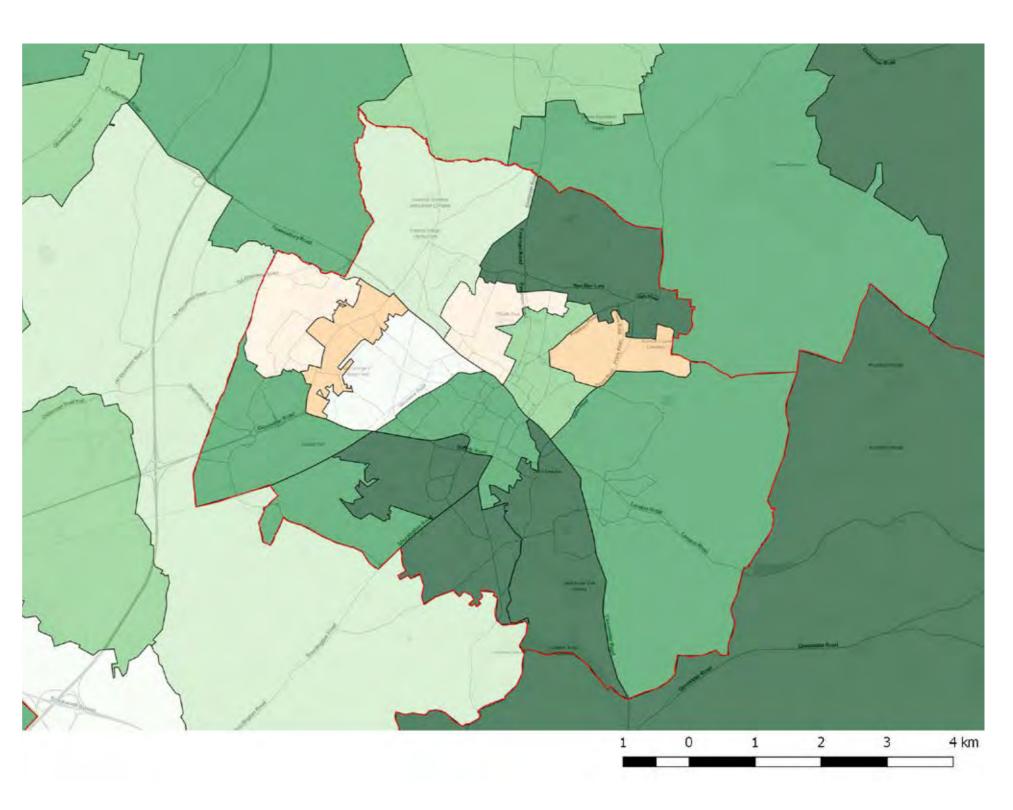
#### Legend

Female Healthy Life Expectancy (msoa) below England ave

46.1 - 53.6
53.6 - 56.5
56.5 - 58.9
58.9 - 61.2
61.2 - 63.4
Female Healthy Life Expectancy
(msoa) England ave or above
63.5 - 65.3
65.3 - 67.2
67.2 - 69.3

69.3 - 71.8

71.8 - 78.3

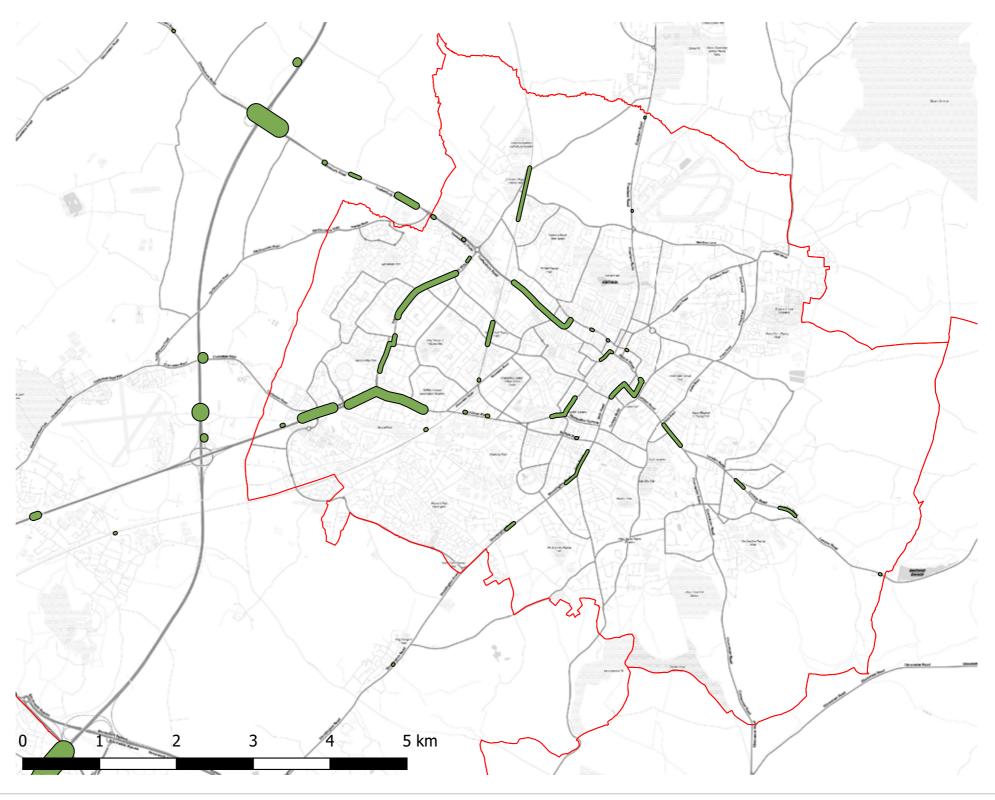


#### NOISE IMPORTANT AREAS

This map indicates Important Areas (IAs) or noise 'hotspots' identified by DEFRA's strategic noise mapping exercise, carried out in 2012.

Significant lengths of the strategic highway routes within Cheltenham are covered by Important Areas, and many appear to impact on residential properties, giving rise to consequential health concerns as a result of traffic noise.

It is noteworthy that the stretches of A4019 and A40, along with Princess Elizabeth Way, that are worst affected are the stretches of road that run along or through the areas identified on previous pages as having some of the worst quality of life indicators.



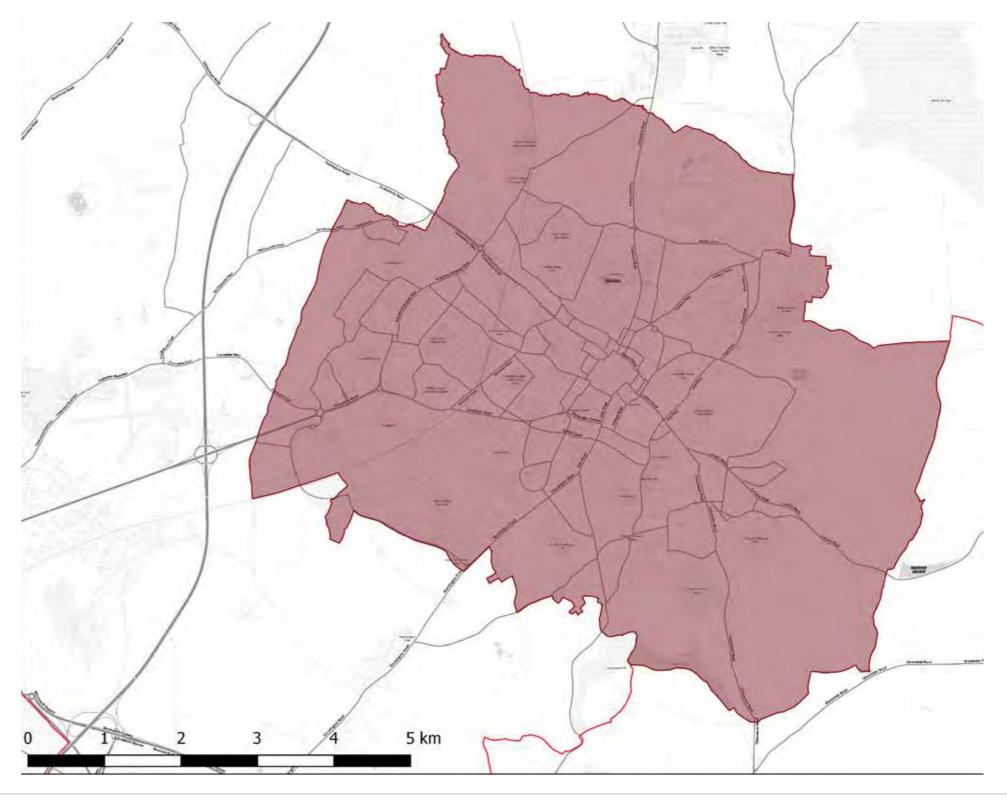
Key
Area Boundary
Noise Important Area

# AIR QUALITY MANAGEMENT AREA (AQMA)

The Cheltenham air quality management area boundary can be seen on the adjacent plan. The entire borough is designated an AQMA, reflecting the number of locations exceeding legal limits for Nitrogen Dioxide.

Poor air quality has serious health implications and reduces the liveability of the town.

The purpose of an AQMA is to identify those locations where action is necessary to improve air quality. Although locations of poorer air quality within Cheltenham are localised, designating the whole town an AQMA reflects both the wide population exposure to poor quality air, and the recognition that the effect of door-to-door transport choices is a key driver of reduced local air quality.





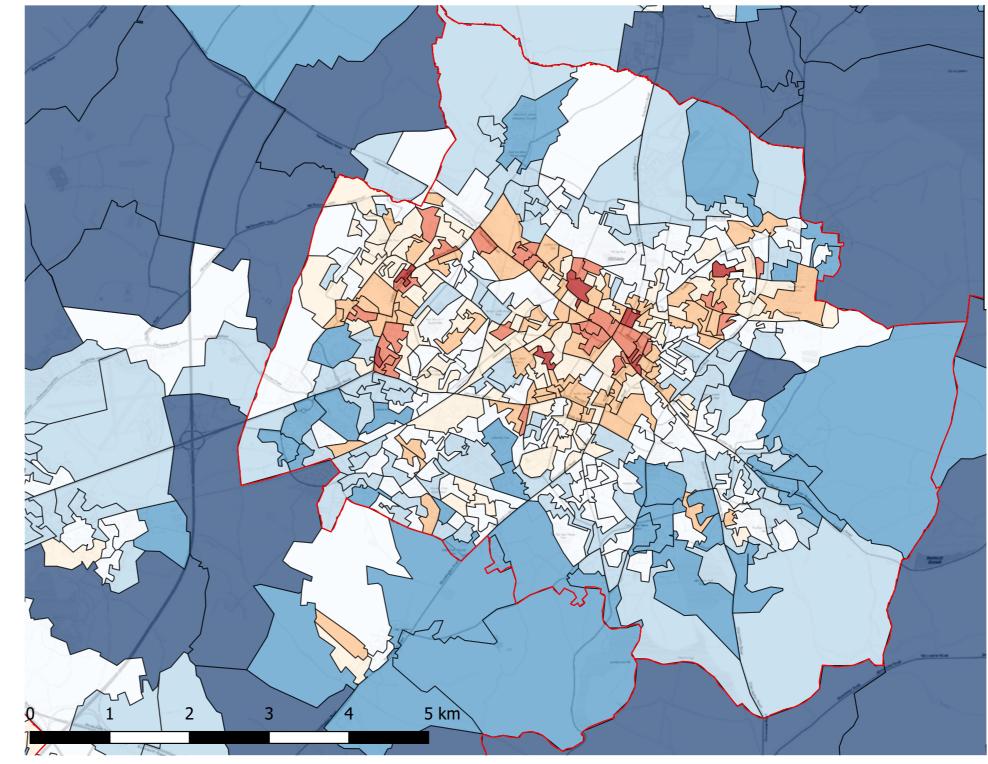
#### CAR AND VAN AVAILABILITY

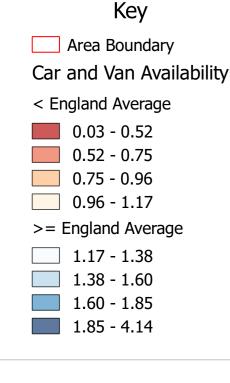
Household access to a car or van appears varied across the town. This metric is plotted by comparison with the England average, with warmer colours indicating below average access.

Residents in the town centre appear to have the least availability, with the peripheral areas having greater access to car or van. This pattern is expected, but there are significant areas that do not fit this pattern. Most notably the areas around Princess Elizabeth Way, to the west, and Priors Road to the north east of the town centre.

It is notable that the areas of lower van and car availability seem to correlate with those areas characterised by lower healthy life expectancy and higher levels of childhood obesity.

This is consistent with the idea that those with the least access to transport options often suffer disproportionately from the disadvantages of those transport systems.





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#### OBSERVATIONS

Cheltenham's employment land is not distributed evenly across the town, being concentrated in the town centre and to the western and north-western fringes of the town.

The town's eastern edge is defined by the Cotswold scarp and the AONB, which constrain growth to the east and south east.

Strategic allocations have been identified to the west and north west of the town.

Across a number of demographic and economic indicators, the west and north-west of the town, along with parts of the town centre under-perform the rest of the town.

These areas also experience some of the more severe transport dis-benefits, as indicated by the noise important areas plan, while having some of the lowest access to private motor vehicles.

The main strategic allocations for Cheltenham, which will increase local population as well as transport demand, are proposed on the edges of the same areas, to the west and north-west of the town, and on the parts of the strategic road network that run through them.

Accommodating the increase in travel demand associated with the planned growth will need to be achieved in a way that protects existing communities and neighbourhoods and even creates new sustainable travel opportunities for them, while also protecting and enhancing Cheltenham's character and historic townscape.

## **KEY ROUTES - CHARLTON KINGS**

Charlton Kings is a contiguous village which forms part of Cheltenham's wider conurbation. Sixways is an active local centre located towards the north west of Charlton Kings along the A40 London Road, a radial route providing links between south east Cheltenham and the town centre. **EXISTING** 

This plan and photos on the following pages illustrate existing layout and conditions in this local centre.

#### ISSUES AND OPPORTUNITIES

Sixways is an active local centre supporting a number of facilities and services such as a health centre, a local supermarket, pharmacy as well as a host of independent local shops, bars and cafés. Site visits have revealed a number of issues:

- High traffic volumes: while high levels of traffic do not necessarily equate to a poor quality environment, aggressive driver behaviour, increased vehicle speeds and noise, poor air quality and large amounts of the public realm being given over to vehicle carriageway and parking do have a negative impact. High traffic speeds and volumes contribute to severance, making it difficult to cross roads at will - especially for some elderly people and those with limited mobility.
- 2. Weak sense of arrival: On high capacity routes such as the A40 London Road, high levels of traffic pass through local centres like Sixways, with many drivers not recognising they've reached a local neighbourhood centre. Consequently driver behaviour may not adapt to reflect that they are passing through areas with an increased place value for the local community. This lack of recognition limits the opportunities for the centre to capture economic advantage from the high number of passing vehicles.



3. Number of side streets: Sixways has a high concentration of both side street junctions and vehicular accesses to private courtyards and dwellings. For both pedestrians and cyclists moving up and down the linear local centre this creates a regular pattern of disruptions to movement along the street. Characteristics such as these negatively impact on the pedestrian experience and reduce the desirability of the centre as a place to walk and cycle to, walk around or dwell in, with the potential consequent negative impact on local shops and services.

1	Photo Location marker
1	Entrance to St Edwards Preparatory School and public car part
2	The London Inn public house
3	On-street parking
4	Retail shops and cafes
5	Retail shops and cafes
6	Signalised pedestrian crossing
$\bigcirc$	Access to private rear parking court
8	Dedicated right-turn lane for 5-way junction on A40
9	Signalised 5-way junction with pedestrian crossing points
10	Guard rail on corner of street
1	Parade of shops
12	Informal off-street parking in front of shops
13	No parking - Double yellow lines
14	Bus shelter - Bus bay within carriageway
15	Poor quality surfacing/ pedestrian crossing at junction
16	Car park - London Road sixways public car park



#### KEY ROUTES - HESTER'S WAY

Hester's Way is a residential neighbourhood located in west Cheltenham. This area differs in character from the Regency areas classically associated with Cheltenham, having been largely developed during the 1950s and 60s as a large social housing project. Hester's Way Road is a loop-road serving a majority of the Hester's Way neighbourhood, connecting with Princess Elizabeth Way and Coronation Square at either end.

#### ISSUES AND OPPORTUNITIES

Hester's Way local centre is a small retail parade possessing a co-operative supermarket and post office adjacent to Hester's Way Primary School. Currently a vacant retail unit exists within the local centre. The centre is located at the beginning of a proposed cycle route between the west Cheltenham urban extension and the town centre, and therefore there is plentiful opportunity to create a vibrant and well-used neighbourhood hub. However, the following issues have been identified that are potential barriers to local centre fulfilling this opportunity:

 Aggressive driver behaviour: Hester's Way Road is a loop road connecting Princess Elizabeth Way to much of the Hester's Way neighbourhood, and as such carries a reasonable number of vehicles through its local centre. Elevated traffic volumes do not themselves necessarily lead to an uncomfortable environment. However, vehicles have been observed accelerating aggressively along Princess Elizabeth Way, in apparent response to frustration with localised congestion. This behaviour is intimidating and can result in excessive vehicle noise and speed. High traffic volumes, and high vehicle speeds cause severance by reducing opportunities to cross roads at will- especially for some elderly people and those with limited mobility.

#### **EXISTING**







- 2. Single-sided uses: Currently only a Co-operative supermarket and post office reside on the southern side of the carriageway. There is, therefore, a current of amenities to attract people to the area, and a lack of reasons to remain and dwell in the local centre environment.
- 3. Poor quality environment: Characteristic of some 1950s and 60s housing estates is that development can often back onto public spaces and focal areas. Along Hester's Way Road housing backs onto the northern side of the carriageway with a wall defending the rear gardens of the properties. Similarly, Hester's Way Primary School also backs onto the local

centre with a palisade fence and mature planting defining the boundary between the school playing fields and Hester's Way Road. These blank frontages create an uncomfortable environment and the lack of natural surveillance contributes to a reduced sense of personal security.

#### CHELTENHAM SPA STATION

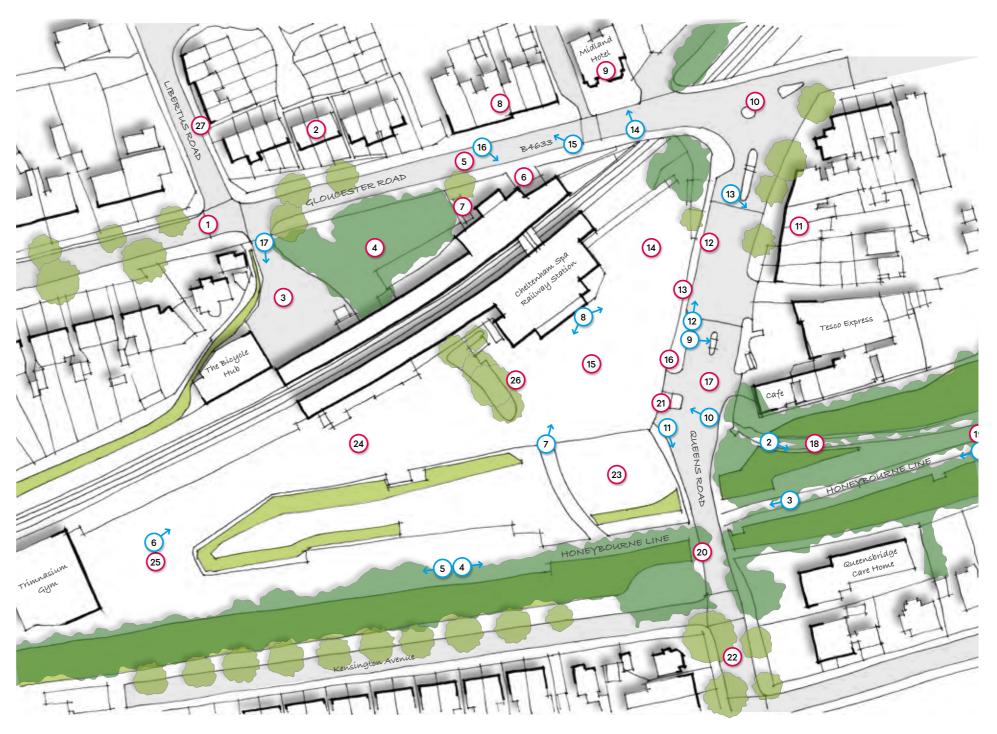
Cheltenham Spa is a small, two-platform station serving the Birmingham-Bristol mainline. Located approximately one mile from the town centre, the railway station is currently accessible via the existing road networks as well as the Honeybourne Line pedestrian/ cycle route, providing direct pedestrian and cycle connections to both the town centre and north Cheltenham.

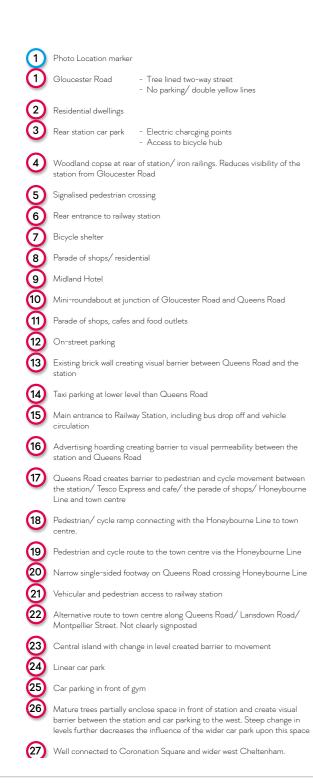
#### ISSUES AND OPPORTUNITIES

Anumber of issues reduce the station's potential as an impressive and well-functioning gateway to Cheltenham, including:

- 1. Poor legibility: Give its separation from the town centre, it is important that people arriving at the station are easily able to navigate there and to other key destinations. The current station environment does not support this, b due to: visual barriers (e.g. a walled car park and advertisement billboards), poorly located signage, narrow and single-sided pedestrian footways, non-signalled pedestrian crossings connecting with the small retail provision opposite, and a lack of visual permeability between the station and the Honeybourne Line.
- 2. Vehicle dominant: To exit the station through its main entrance in its current form, visitors are greeted with a poorly landscaped car park, a taxi rank to the north eastern corner and unsheltered bus stops to the south west. Existing pedestrian routes are poorly laid out, do not follow desire lines, and do not provide segregation from moving vehicles.
- 3. Lack of arrival/ destination space: Both the front and rear entrances to the station are very uninspiring on arrival and do not give a sense of Cheltenham as a place as a whole or what it has to offer. The retail and service provision on site at the station are limited to a cafe within the station building and a private gym occupying a building to the south of the car park.

#### **EXISTING**







# NEIGHBOURHOODS -CORONATION SQUARE

Coronation Square is comprised of a 1960s style retail centre located adjacent to Princess Elizabeth Way, a key thoroughfare between Tewkesbury Road and the Kingsditch trading estate and the A40, which provides links to Gloucester and the M5 motorway.

#### ISSUES AND OPPORTUNITIES

The Square's retail provision is fairly well occupied within Edinburgh Place, however fronting Coronation Square and Princess Elizabeth Way there are a number of vacant units. There are several issues preventing Coronation Square from becoming a thriving and active neighbourhood centre. Some of these issues include:

- 1. Barriers to movement: Roundabouts are notoriously difficult to navigate for both pedestrians and cyclists, with numerous wide carriageways to cross, disrupted desire lines resulting in long detours, and often high volumes of free flowing traffic to overcome. The current layout of the square fulfils much of the same function as a roundabout. As a key node where pedestrians, cyclists and vehicles meet this layout does not favour the movement of these more vulnerable road users.
- 2. Underutilising existing assets: This neighbourhood centre possesses a number of existing assets which could be maximised further to have a positive impact on the overall environment, namely Coronation Square itself. This large green space supports some mature trees and planting, and possesses the opportunity to offer an active space for visitors to the centre to enjoy. Currently the square is severed by two-lanes of traffic on all sides limiting physical connections to it.
- **3. Poor quality public realm:** This is true of the whole of the neighbourhood centre, however the impact of which can be felt most in Edinburgh Place. This large open space lacks

#### **EXISTING**



adequate levels of enclosure, and currently the amount of space is not equivalent to the number of people using it. The results of which is a rather uncomfortable environment that does not encourage users to dwell and enjoy. In addition a series of bollards and large seating structures create the sense of an overall defensive environment, which again does not invite people to spend time in.

(15)

20

(21)

(18) Bus stops

1 Photo Location marker

Puddles nursery

Oasis Cheltenham

1960s retail parade

Three storey

Two storey

- Upper floors office

Patchwork of materials

Some cycle parking

9 Poor quality seating planter

0n-street parking

Bollards/ street furniture

(11) Archway through to rear parking court

8 Large underutilised forecourt

Poor quality

(7) 1960s retail parade

St Catherine's surgery

Gloucestershire police station

Ground floor shops and cafes

- Ground floor shops and cafes

- Upper floors residential apartments

(1)

(2)

3

(4)

(5)



#### NEIGHBOURHOODS - ST PAUL'S

St Paul's is a residential neighbourhood within Cheltenham, geographically centred around St Paul's church. Located a short distance north west of the town centre and south of Pittville Park, St Paul's is an active neighbourhood with access to many services and amenities.

#### ISSUES AND OPPORTUNITIES

Located at the crossing of axes linking High Street with Pittville Park and St Paul's Road, connecting the northern radial routes with Kingsditch trading estate and Swindon Village, this nodal square has the opportunity to become a thriving local centre that builds on the existing church, pub and School House Cafe provision. In order to achieve this, there are a number of issues in which to overcome:

- 1. Vehicle 'rat-run': Running parallel with the A4019 radial route, linking Cheltenham town centre with Kingsditch trading estate and the M5 motorway, St Paul's road is regularly used as a local rat-run to avoid congestion on the nearby strategic roads. However, St Paul's Road isn't designed to accommodate high levels of traffic attempting to travel through this neighbourhood quickly. Localised pinch points created by on-street parking can result in build-ups in traffic and consequently lead to driver frustration. The response of some drivers has been observed to lead to aggressive acceleration and some elevated vehicle speeds with associated noise, with the consequent negative impact on residents and other local people using these roads.
- 2. Lack of usable space: Although the University of Gloucestershire, the Coconut Tree public house, St Paul's Church and the School House Cafe all either front onto the square or are in close proximity, there is a lack of usable space able accommodate a number of people in a single

#### **EXISTING**



area. Narrow footways, a gated green space courtyard in front of the church and large amounts of the public realm given over to vehicle carriageways and parking provision results in inadequate provision to serve these local amenities.

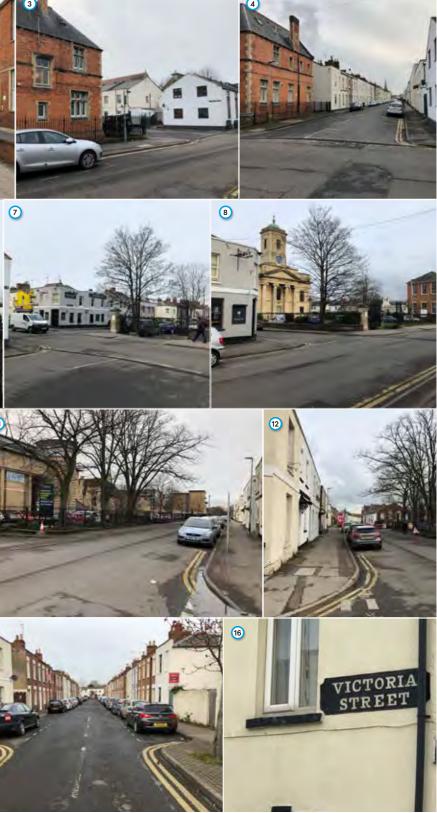
3. Parking Conflicts: There is concentrated competition for local parking from local residents and business, as well as those travelling for church services. This can result in the square being overly dominated by parked vehicles.



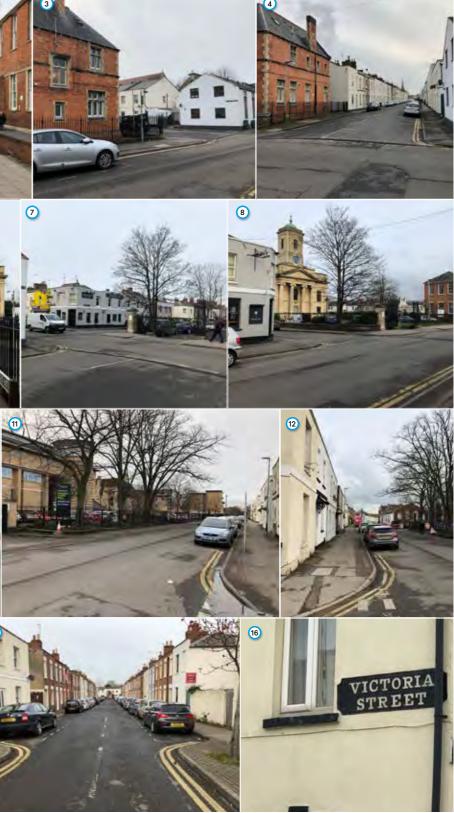














# 3 | Current Journey Patterns

#### JOURNEYS TO WORK

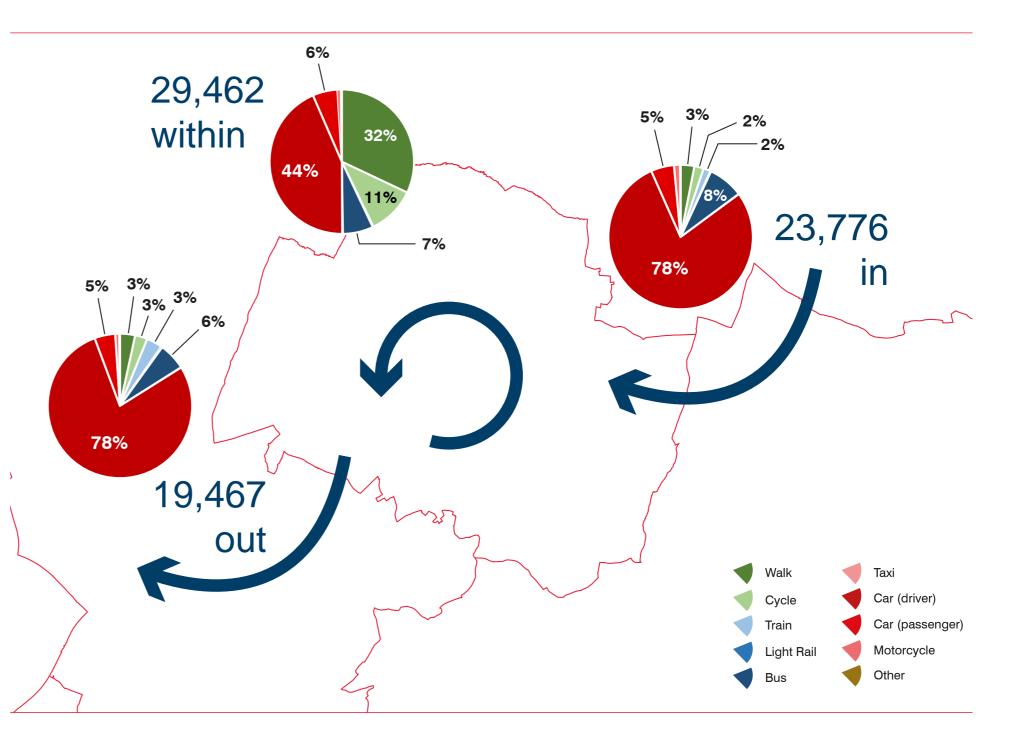
Census data from 2011 provides a detailed snapshot of travel to work (TTW) data for people both living and working in Cheltenham.

This data, although now a few years old provides the most comprehensive date set about travel behaviour in Cheltenham.

The figure on this page summarises overall travel behaviour. It illustrates that trips into, out from and within Cheltenham indicate a high level of self-containment (55%). Self-containment is the proportion of the workday population that lives and works within the town. The town also has a net increase in workday population, with more people travelling in to work (23,776) than travelling out to work elsewhere (19,467).

Other key points that can be drawn from this data include:

- 40% of travel to work trips start and end in Cheltenham
- Of these internal trips, there is relatively high non-car mode share (50%)
- Cycle mode share for trips within Cheltenham is healthy, but at 11% much lower than the car or walking. Given the compact and level nature of town, a higher mode share should be achievable.
- The bus mode share is similar for regardless of whether TTW trips are into, out of or entirely within the town, and is relatively low for an urban area (between 6% and 8%)
- Rail mode share is low (3% outgoing and 2% incoming trips)
- Car mode share is high for travel to work trips both to and from Cheltenham, at 78%
- Car sharing mode share is 5% for TTW trips in and out of the town.



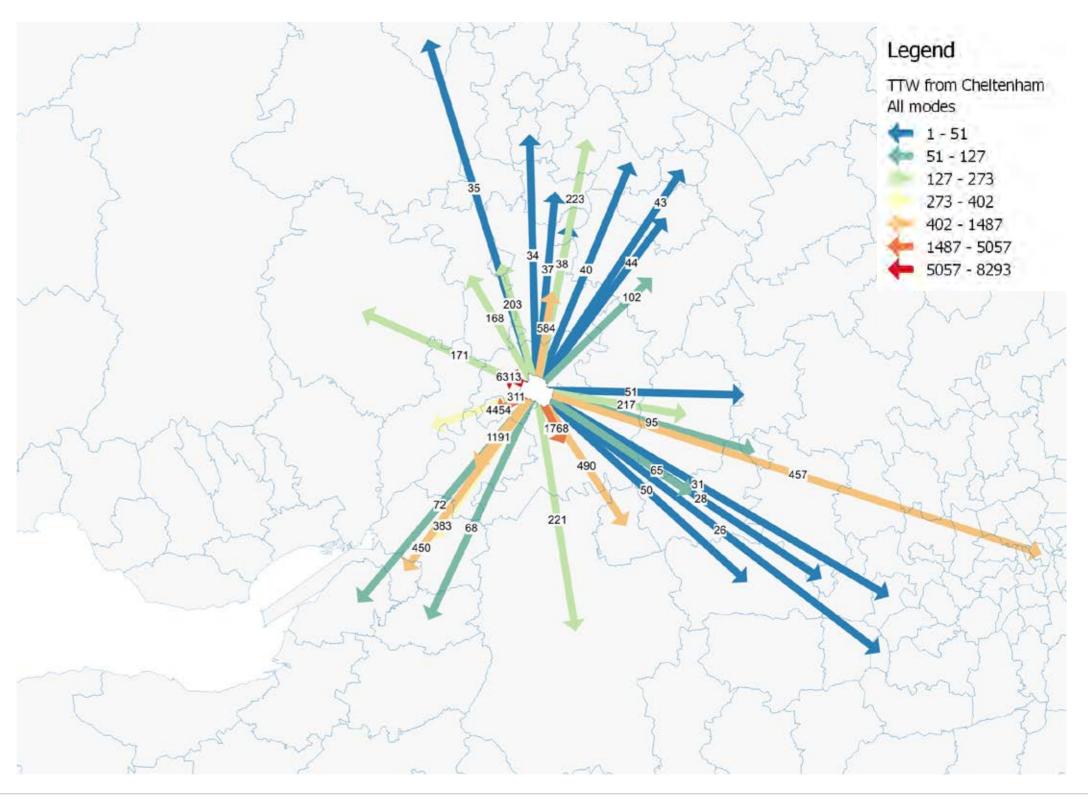
# COMMUTING FROM CHELTENHAM

Census TTW data also allows us to explore trip patterns. The figure on this page illustrates the top destinations for commuting out of Cheltenham. These are the neighbouring areas of:

- Tewkesbury District (6,313)
- Gloucester (4,454)
- Cirencester District (1,768)
- Stroud (1,191)

Other significant destinations, albeit with much smaller numbers of trips include Worcestershire, London and Bristol.

The high number of trips to neighbouring areas, particularly given that many will use well-defined corridors, presents an opportunity to capture and transform some of the currently 78% of trips undertaken by car to more sustainable modes.



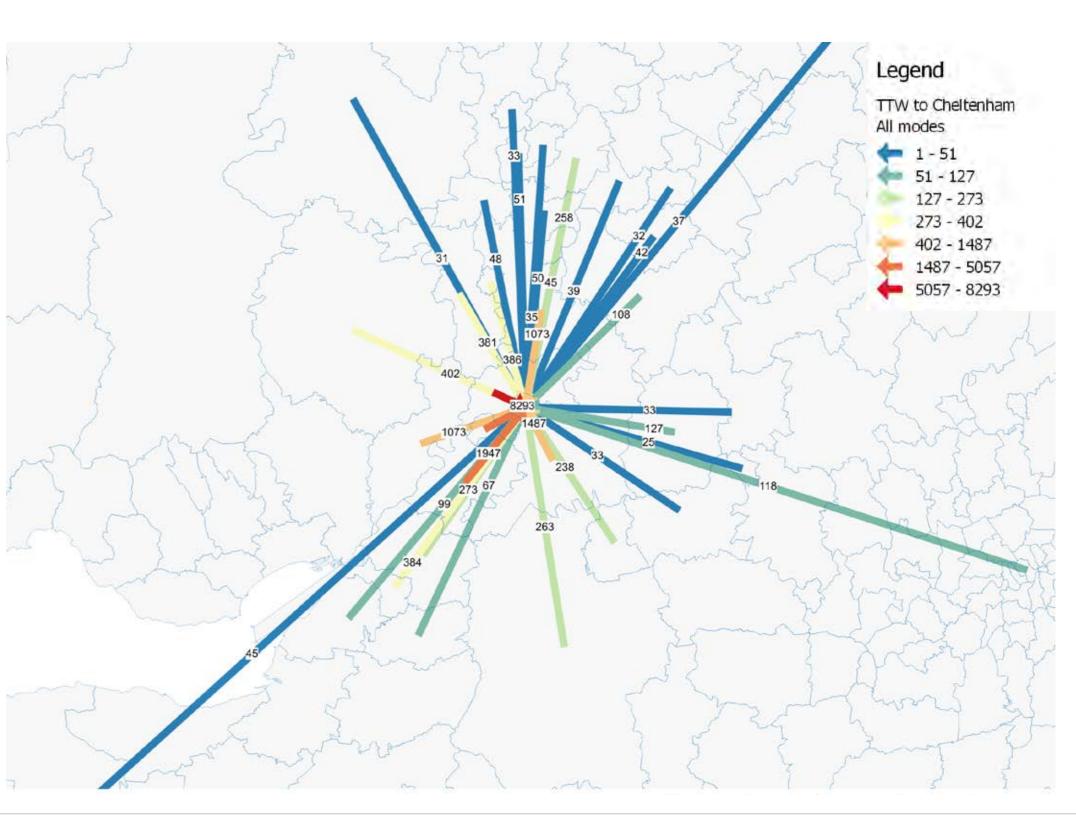
## COMMUTING INTO CHELTENHAM

The top destinations for commuting into Cheltenham are the neighbouring areas of:

- Tewkesbury District (8,293)
- Gloucester (4,454)
- Stroud (1,947)
- Cirencester District (1,487)
- Worcestershire (1,073)

More generally, in-commuting is broadly characterised by two zones within each of which trips are fairly evenly spread. One, with the highest number of trips, lies to the west, and the other to the east..

The high number of in-commuting trips from neighbouring towns and cities, particularly given that many will use well-defined corridors, presents a particular opportunity to capture and transform many of the currently 78% of trips undertaken by car to more sustainable modes, at the town's edges.

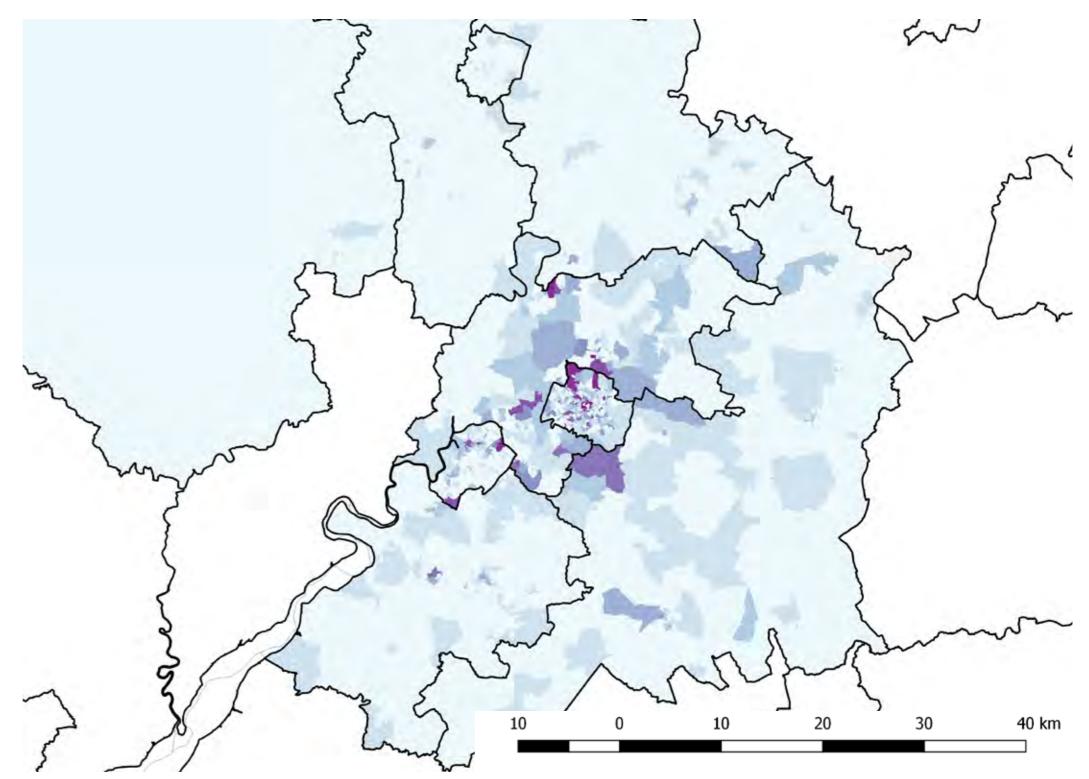


# LOCAL COMMUTING FROM CHELTENHAM

Analysis of Travel to Work trips between different Census Output Area geographies allows a more detailed view of where the main origins and destinations are for travel to work.

The plan on this page illustrates which Output Areas people resident in Cheltenham travel to for work.

There is a particular concentration of Travel to Work trips to central and north/north-west Cheltenham, and to the west towards Golden Valley.



#### Legend

Travel to Work from Cheltenham by Output Area of Workplace

	0 - 5
	5 - 24
-	24 - 61
	61 - 114
	114 - 180
	180 - 245
	245 - 371
	371 - 720
<u>.</u>	720 - 925

# LOCAL COMMUTING INTO CHELTENHAM

The Output Areas that people travel from in order to work in Cheltenham radiate in a generally predictable manner in that there is a higher concentration of travel from within and immediately around Cheltenham, and that travel to work in Cheltenham drops off with the distance of the Output Area (OA) from the town.

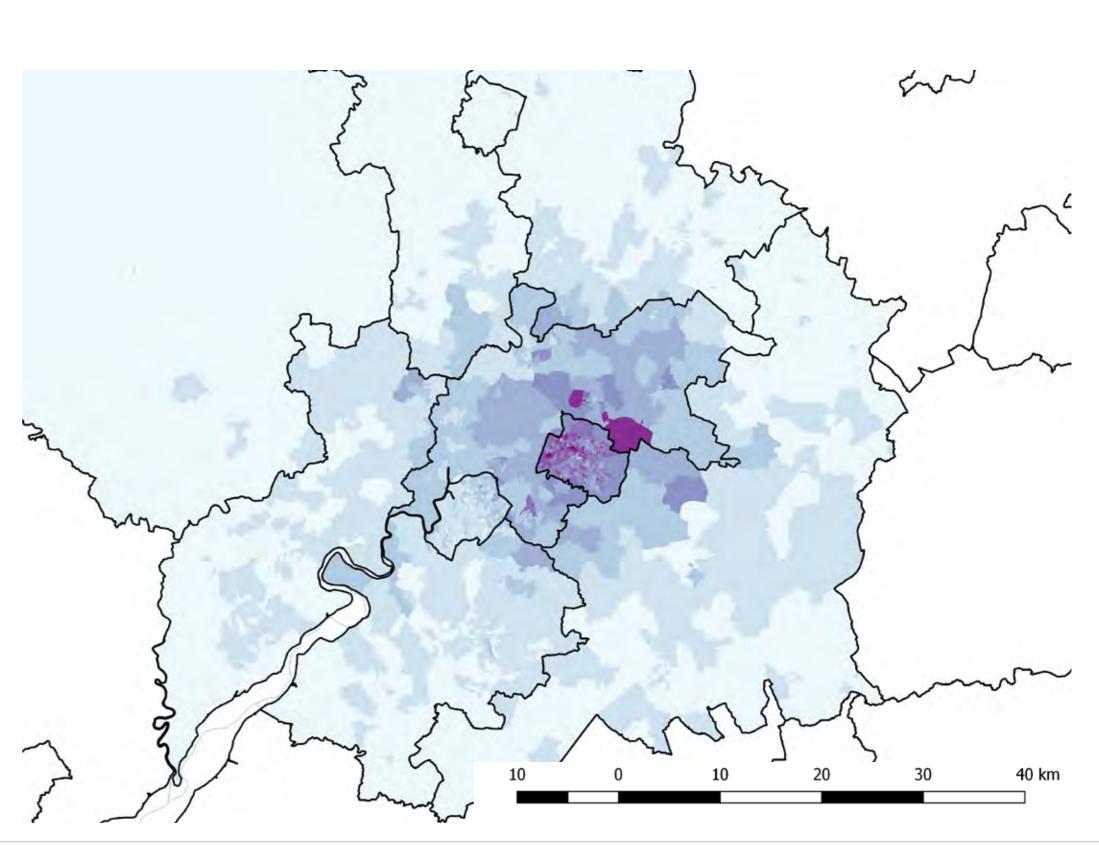
It is particularly notable that areas around Bishop's Cleeve are hotspots. This area is a major component destination of trips to Tewkesbury District, and is very close to Cheltenham borough.

Because Output Areas are defined to have a broadly consistent population, the physical area of the OAs show significant variation. For this reason it is important to consider the colour of the OAs on the map, rather than their physical size. This also means that detail can be lost for some of the most densely populated OAs in built up areas - including some in Gloucester.

#### Legend

Travel to Work to Cheltenham by Output Area of Residence 0 - 4 4 - 13 13 - 26 26 - 45 45 - 63 63 - 81 81 - 104

> 104 - 144 144 - 192



## TRAVEL TO WORK FLOWS

The plans on the following pages illustrate the internal TTW trips within Cheltenham, to and from each MSOA census area.

Three workplace MSOAs in particular dominate TTW flows. These are:

- Town centre MSOA E02004608,
- Benhall MSOA E02004609; and
- Kingsditch MSOA E02004600.

These are the three major employment centres within Cheltenham.

The following pages are ordered in terms of relative number of trips to MSOA as a workplace, with the most significant number of trips first.

There is a broader spread of MSOAs contributing large numbers of trips to the overall internal TTW landscape in Cheltenham.

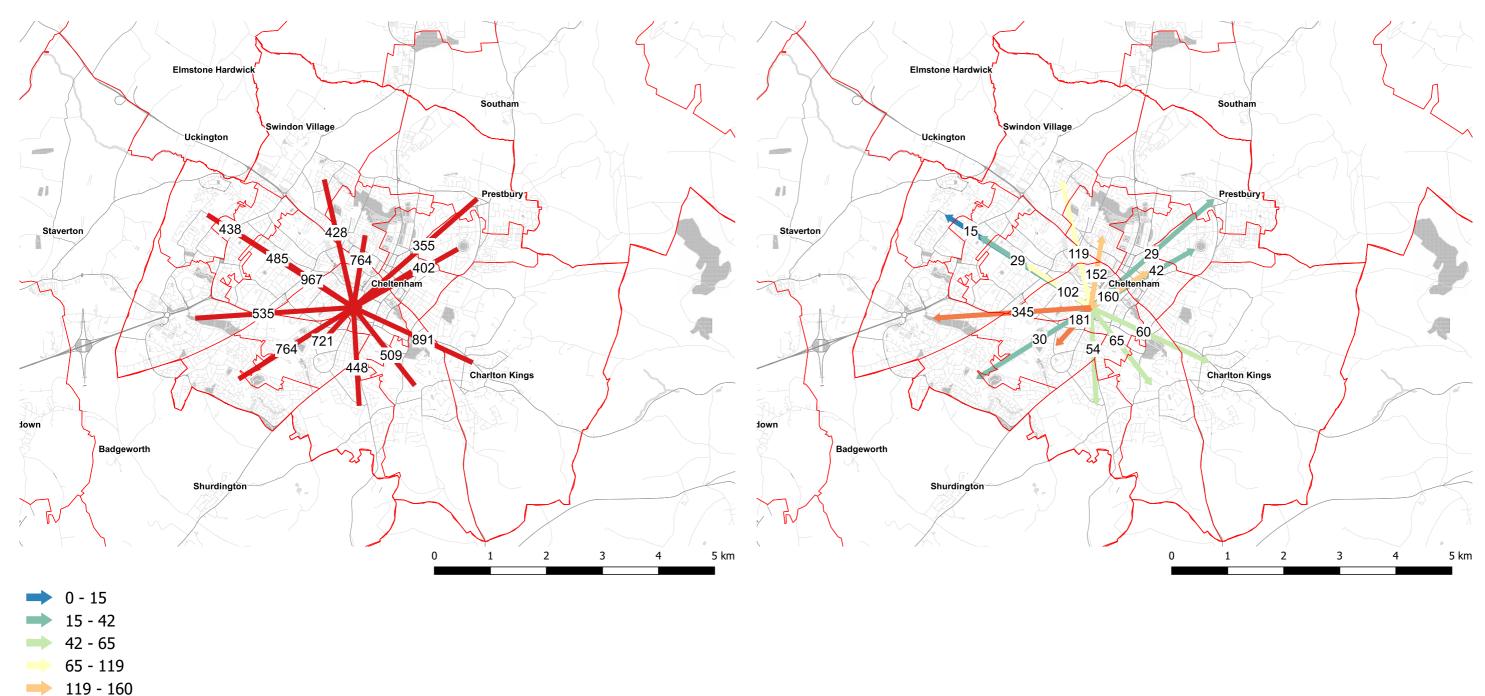
However, even here there is a subset of areas contributing more than the others. These are MSOAs: E02004606. E02004607, E02004602, E02004604, E02004612, E02004603, and E02004611.

Each page shows flows to and from a particular MSOA, showing first the flows to MSOA as and area of workplace, and next to it the flows from the same MSOA as an area of residence.

# TRAVEL TO WORK MSOA E02004608

#### Travel to Workplace MSOA E02004608

#### Travel from Residence MSOA E02004608



- ➡ 160 345
- ➡ 345 1307
- Area Boundary